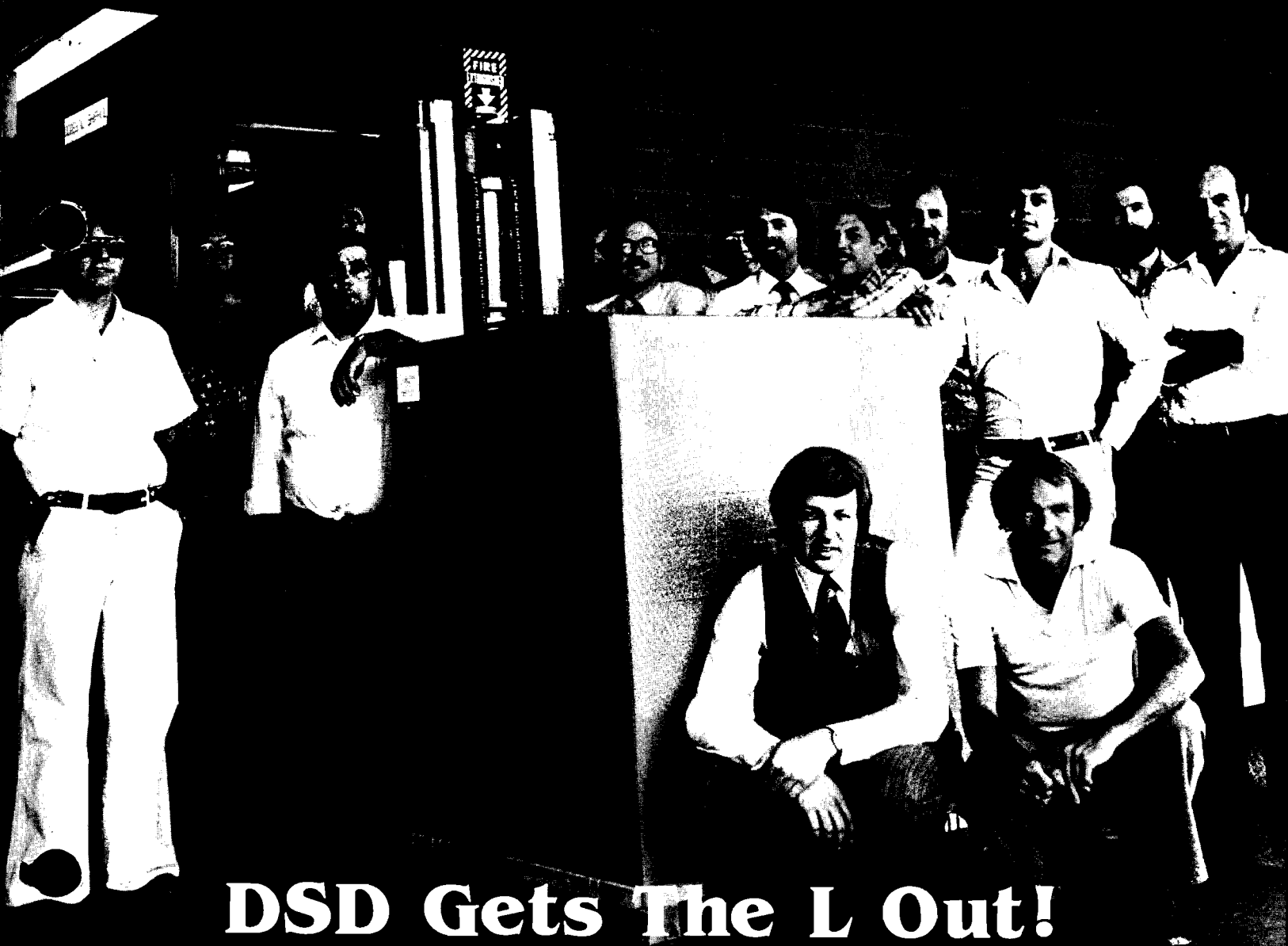


For HP Field Personnel

June 15, 1980

Computer News



DSD Gets The L Out!

For Internal Use Only

HP Computer Museum

www.hpmuseum.net

For research and education purposes only.

Computer News

June 15, 1980
Vol. 5, No. 15

On the Cover

DSD's L-Series team sees the first shipment off. Article begins on page 6.

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L-Series Shipments Begin *Joe Hess/DSD*

The first L-Series computers were shipped to customers last month. With availability at about 8 weeks, the L-Series is the most available of low-cost, multi-purpose computers.

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New 35mm Slide Show for Seminar Selling Technical Computers *Mike Radisich/DCD*

This show describes technical computers, how they're used and how to select the "right" one. Great for opening any seminar.

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Introducing FIN/250 *Scott Oki/GSD*

OEMs should welcome this general accounting solution on the HP 250, that practically every small business can use.

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Materials Management/3000 Shipments Begin *Rich Stearns/GSD*

As scheduled, MM/3000 was released June 2. Volume shipments have begun.

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CMG

Next NPT Moved to August

By Jerry Epps/CMG

As part of the plan to hold NPTs quarterly, the July tour will be rescheduled for August, with the next tour in November.

Tour stops will be one day only, with concurrent sessions for Technical and Commercial people. Speakers who need to introduce their product to both groups will make two separate presentations.

The location for the bracketed stops will probably be the same on both days.

August 1980 NPT Schedule

	Team 1	Team 2	Team 3
August 4	Farmington Hills	Montreal	Edmonton
6	Cincinnati	Toronto	Bellevue
8	Rolling Meadows	Lexington	Englewood
11	St. Louis/St. Paul	Rochester	Santa Clara }
12		King of Prussia	Palo Alto }
13	Atlanta		
14		Paramus }	Lawndale }
15	Richardson	Manhattan }	Fullerton }
18	Houston	Rockville	Mexico City

CSO

Low Prices on Supplies for HP Offices

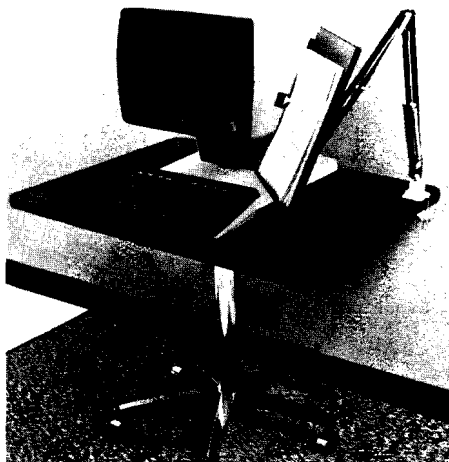
By Fran Jeffries/CSO

Money Saving Reminder: All HP locations (field offices, demo or training centers, Divisions, etc.) qualify for special low prices on HP Computer Supplies when those supplies are for *internal* HP use rather than for resale to trade customers.

For example, the sturdy HP 92170A table shown opposite, which lists at \$230, can be purchased for only \$116.72; the HP 92171A copy holder, opposite, lists at \$49 but HP internal transfer price is only \$22.42.

Similar savings are available on magnetic tape, flexible discs, printer ribbons — in fact, all supplies listed in the Computer Supplies Catalog (P/N 5953-2450).

Tell your data center manager and others in your organization responsible for buying computer supplies. Have your internal ordering desk place an I2 HEART order — putting PLEASEADV in the price area. All prices will be F.O.B. Sunnyvale, Mt. View, or San Diego, California — and quantity discounts do not apply. Be sure to order via HEART, since Internal Orders cannot be processed for these items.



CSD

Addendum: CSD's Power Line Conditioner

By Jay Friedman/CSD

Product number and pricing data were mistakenly omitted from my May 1 CS *Newsletter* article. The following should have been included:

HP 3530A Power Line Conditioner \$1350 (1.8 KVA 60Hz)

Remember, we are offering customers with HP 3000 Series 30 systems an HP supported solution which can ensure their performance and reliability expectations. Those customers with definite requirements for this product can receive it coordinated with their systems.

An Improved Procedure for HP 3000 Software Release 2011

By Steve Rowe/CSD

During May, CSD and GSD released the new 3000 Software Installation Tape 2011. Announcement to customers is targeted for mid-June with distribution through the summer.

After significant testing to assure the release performs within HP's high reliability goals, this software release brings to our customers 84 minor enhancements for FOS and 41 for all other subsystems. Additionally, 315 Corrective Software changes have been implemented in FOS and correspondingly 148 in the subsystems. HP's objective with this software release is to improve the customer announcement process assuring each customer has a smooth transition and positive experience while implementing the new 2011 release.

Calendar of Events

GSD and CSD released the software 2011 ITS and appropriate documentation to each SEO for field testing in Demonstration Centers and selected customer accounts during the latter part of May. Initial priorities for releases are North America, Australia, Mexico, Germany, France, Italy, UK and the Netherlands.

During June, a letter will be sent to each CSS or SSS customer (with SSB) announcing the new release along with its many features and benefits. Associated customer documentation will also be distributed during June.

After approximately one month of field testing, GSD's on-line support group, with the cooperation of each of the SEO software coordinators will re-configure a set of Mandatory Patches that will standardize this worldwide distribution of the 2011 release. During July, SEO software coordinators will build the final 2011 versions locally and release for customer distribution through CEO and SEO districts.

Software enhancements and updates are a major benefit of our software support program. It is our objective with these efforts to further promote software support products through efficient delivery of this important feature.

CSD Data Book Reprint

By Carolyn Stewart/CSD

CSD's *Support Services Data Book* has now been reprinted. Copies may be ordered from Literature Distribution Center in Palo Alto.

The new data book (P/N 5953-3318) contains the same product descriptions and information as the last edition plus several important corrections. A summary of these revisions follows:

Product Support Life. In the Introduction, the paragraph regarding services provided

after support life was changed to read, "...the Computer Support Organization may continue to provide services either on a service agreement basis or on a best effort basis..." The previous edition of the data book stated that the Computer Support Organization will provide services. References to HP's Product Support life policy were deleted from the Standard, Basic, On-Site and Field Repair Center Agreement Sections.

Early Cancellation. The paragraph regarding early cancellation in the Standard, Basic, On-Site and Field Repair Center Agreement Sections was deleted from the reprint.

Time and Material (Per Call) Service. The sections specifying T&M service locations, Response Time, Period of Coverage and Charges have been revised consistent with CSD support policy (see C. Kryzan, *Computer News*, June 1). Time and Material Service is now available from both Primary and Secondary SROs. However, Secondary SROs will service only travel zones 1, 2 and 3. Improved Response and Out-of-Coverage Service is only offered from Primary SROs.

Computer Support Locations. The Service Responsible Office, Field Repair Center, and Customer Training Center address lists were also updated. The new address lists contain a number of new offices in North America and Europe.

SDC's Internal Subscription Services

By Jeff Nagle/CSD

If you have ever walked by a colleague's desk, seen the latest *Communicator* and thought, "How do I get one?" Or, if you've seen the latest version of a hardware or software manual update and asked the

same question, the answer lies in the SDC Internal Subscription Services Order Form.

The Software Distribution Center (SDC) of CSD not only provides all the software and manual updates to CSS and SSS customers, it also supplies SEs, CEs and SRs with support material. This support material includes *Communicators*, SSBs, new manuals (when released), manual updates, SE Notes, CE Notes, Product Support Plans, software, and many other items.

There are currently over 100 subscription services available; the newest additions are the DTD, SE and CE subscription services.

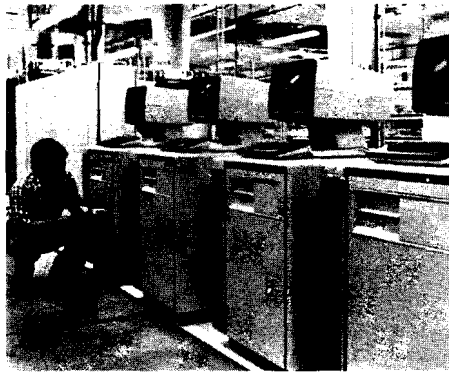
How much will the services cost? First, there is no monthly or yearly subscription price. All material sent is transferred at cost, and billed at the time the shipment is made. This means that the bills will vary depending on the amount of material sent. Second, there is no need to renew each year. As long as you do not cancel your order with SDC you will receive material. Changes can be made at any time.

The content of each subscription service is defined by the manufacturing division. Whenever the division updates a manual or has some information they want passed on to a specific group, they will contact SDC to schedule a distribution.

When filling out the order form, please make sure that you include your employee number and office COMSYS code. Also make sure your manager signs the form. These steps will make it easier and faster to process.

In future issues, the contents of some of the services will be discussed. To get an order form, or if you have any questions or comments, please contact Jeff Nagle at SDC, (408) 738-8858 extension 232, COMSYS 5006.

DSD



L-Series Shipments Begin

By Joe Hess/DSD

The first L-Series computers were shipped to customers last month. Shipments of box and board computers are now underway. Availability of L-Series systems is about eight weeks and slightly less on board and box computers.

The above delivery commitments make the L-Series the most available of low cost multi-purpose computers. Some vendors, such as DEC, extended their deliveries of PDP-11/23 out to as much as a year! Capitalizing on the immediate availability of the L has offered many large OEMs just the incentive they needed to convert to HP!

If you have specific opportunities where delivery is needed to close the deal, let us know. We may be able to help you and your customer an "L" of a lot!

IBM Flexible Disc Compatibility with the L

By Ed Brumit/DSD

RTE-L does not at present support file access to IBM formatted discs. However, sophisticated users can write their own interface conversion routines with assistance of a document available from DSD Sales Development.

The L-Series Model 10 includes a 7902A flexible disc subsystem which is designed as a doubled-sided double density disc drive, but Fort Collins didn't stop there!

The hardware and firmware have also been designed to read and write in the single density format which is used by IBM 3740 data entry equipment. Once a disc is inserted into the drive, the controller determines which format is present and then proceeds to interpret the data appropriately.

The format for IBM flexible discs, however, is different from that used on HP flexible discs.

Differences between IBM and HP flexible discs

	HP double density	IBM single density
bytes per sector	256	128
sectors per track	30	26
sector numbering	0-29	26
sides	2	1
tracks per side	77	77
track numbering	0-77	0-76
bytes per drive (formatted)	1.18Mb (154 tracks)	243Kb (data)

Therefore, OEMs or sophisticated end users who wish to use this IBM 3740 compatibility can write interfacing and conversion routines to access the flexible disc subsystem. A "dummy" subchannel is assigned pointing to the 7902, allowing the programmer to set-up a track map for IBM formatted discs. Then, depending on the sophistication of the programmer, routines can be written using EXEC calls to perform one or all of the following functions:

- Initialize an IBM formatted disc
- Read and write string data onto an IBM formatted disc
- Read and write IBM discs using EBCDIC or ASCII (remember, IBM machines use EBCDIC encoded data)
- Copy files from or to IBM discs

Information necessary to write access routines for IBM 3740 formatted discs on the Model 10 has been documented by DSD. For information, contact your DSD Sales Development engineer.

What Flexible Disc for the 7902 on the Model 10?

By Ed Brumit/DS

Presently the only floppy supported on the Model 10 is the HP 9164-0100. This P/N contains 10 1.2 megabyte double-sided dual density discs. It is marketed by Fort Collins Division and can be ordered through Computer Supplies.

2240 Sales Force Change

By Bill Senske/DSD

As part of a move toward a consistent long range HP Measurement Automation strategy which has been set by Paul Ely and Bill Terry, the 2240A product line will be coded effective June 1, 1980 to give commission and quota credit to the O1 Instrument Sales Force. The purpose of this change is to utilize HP's strength in instrumentation to support, develop and leverage opportunities for HP in Measurement Automation. Computer-oriented instrumentation is a key factor in the growth of the computer business in the 1980's. HP can best retain its leadership in electronic instrumentation by actively promoting a close working relationship between the Computer and Instrument Groups — both Sales Forces and Divisions.

The recoding of the 2240A should encourage the Instrument Sales Forces to utilize their vast measurement experience to assist the selling of HP Technical Computers through cooperative selling. To date the 2240 has leveraged many millions of dollars of technical CPU sales and associated peripherals sales. The move to cooperative selling can only enhance our position in this key market.

DSD & Roseville Price Changes

By Steve Pomeroy/DSD

DSD has had to increase some prices, but note that:

- The price increases are *not* across-the-board (as have been announced by most of our competitors).
- The prices we have increased are not on our main products. Prices for computers with memory, systems, and most interface cards remain unchanged!

Here is a summary of the price changes:

Computers, I/O Cards, Accessories

Product No.	Description	Old Price	New Price
DSD			
12587B	Asynchronous Terminal Interface	\$550	\$700
12589A	Auto Call	450	600
12739G	Memory Cable	150	200
12781A	Dual CPU I/O Kit	900	1050
12791A	Firmware Expansion Module	500	575
12920B	Multiplexer	2000	2600
12944B	Power Fail Recovery for 2108M, 2109E	700	800
12967A	Synchronous Interface	650	800
12979B	I/O Extender	4800	5250
12991B	Power Fail Recovery for 2111F, 2112M, 2113E, 2117F	800	900
13047A	2K User Control Store	550	700
2105A	M-Series CPU	5750	6250
2108B	M-Series CPU w/o Memory	5300	5800
2109B	E-Series CPU w/o Memory	6000	6700
2112B	M-Series CPU w/o Memory	6200	6800
2113B	E-Series CPU w/o Memory	6850	7500

Roseville

12566B	Microcircuit Interface	350	400
12618A	Data Set	700	850
12620A	Breadboard Interface	150	200
12821A	H-Disc Interface	700	800
12930A	Universal Interface	850	1000
12880A	CRT Interface	350	450
12966A	Buffered Asynchronous Communications Interface	600	700
91200B	TV Interface	1700	2000

Subsystems and Systems Options

12996A	Thermal Printer Subsystem	3700	4500
12996A Opt 001	Deletes Printer	-3145	-3945
2176C Opt 002	Additional Cabinet for System	1850	2100
2176D Opt 002	Additional Cabinet for System	2650	2900
2177C Opt 002	Additional Cabinet for System	1850	2100
2177D Opt 002	Additional Cabinet for System	2650	2900

Software

92069A	IMAGE & QUERY	3000	3500
92069R	IMAGE & QUERY (Right-to-Copy)	1200	1400

ATS/1000 Price Changes

By Dawson Mabey/DSD

The following price changes become effective with the July 1, 1980 Corporate Price List.

Product No.	Description	New Price
9411A	Switch Controller	no change
-002	Aux. DC Power (120VAC)	\$450
-003	Aux. DC Power (240VAC)	450
94122A	Test Adapter (Vertical)	850
94122B	Test Adapter (Horizontal)	850
94122C	Acces. Patch Cord Kit	650
9413A	VHF Switch	no change
-001	BNC Front Panel	250
94141A	PCA Test Fixture	3000
94146A	Test Adapter Board	125
9414A	Matrix Switch	no change
-001	Front Panel Connectors	900
9415A	Digital Test Unit (180 pin)	17,000
-001	DTU, 360 pins	3400
-003	DTU, 360 pins	3400
-008	DTU, 360 pins	1000
-011	DTU, 240 pins	5400
93283A	Racking & Cabling Service	2500
-001	One Bay Cabinet	1800
-004	Signal Cable	100
-009	Switch Register Panel	1575
93284A	Config./Test Service	4000
-008	Source Inspection (1 day)	3000
93285A	Engineering Unit	120

A new Summary Page for the ATS Configuration Guide that reflects the changes in ATS Integration Services (93283A, 93284A, 93285A) will be available in early July.

DATACAP Enhancements & Price Change

By Millo Fenzi/DSD

The 2027 PCO (July 1 Release) of DATACAP/1000 includes a number of significant enhancements. Among these is DATACAP's support of the new Grenoble DATACAPTURE terminal features; the CRT, bar code and mag stripe readers. Equally important is the shared data base capability. Other programs can now modify the data base while DATACAP is updating it or using it for validation (DATACAP provides a way to handle record locking). Additional features are a logging utility that records all IMAGE data base modifications on mag tape or disc and a recovery utility that automatically updates the data base from this log file. DATACAP will also support batch start up and stop for unattended operation.

Customers who presently have current (92080A) DATACAP and are on support services will get the new software at no cost. Effective July 1, the price of DATACAP will reflect its greater capability and will be \$5,000 versus the present price of \$3,000. The DATACAP lab team is working to bring you product enhancements to make DATACAP even more valuable to your manufacturing customers.

Price Change Summary

	Today	As of July 1
92080A	\$3,000	\$5,000
92080A Opt. 001	-1,500	-2,500
92080R	1,200	2,000
92080R Opt. 001	-600	-1,000

Note: Please encourage any customers that have 92903A/R DATACAP that have not done so, to order their *special, free* upgrade to 92080A DATACAP prior to July 1. (For details, see CS Newsletter Vol. 4 #22.)

HP & DG Data Management Products Comparison

By Corley Phillips/DSD

DG recently announced a new Data Base Management System (DBMS) as well as enhancements to their INFOS File Management System. These products run on commercial Eclipses under the AOS operating system. The following is a summary of these new products and how IMAGE/1000 stacks up against them.

The DG-DBMS is the third CODASYL-compatible DBMS for minis on the market (DEC and Prime have the other two). CODASYL (Conference On Data SYstems Languages) is a voluntary body that developed and guided the evolution of COBOL. (HP is represented on CODASYL). CODASYL's specifications are *not* standards; they are recommendations. There are major objections to the CODASYL DBMS specifications, and some of the better features of non-compatible products will probably need to be incorporated before they could become standards. Even then, alternatives such as relational data bases may make the specifications obsolete before they can ever be adopted as standards.

IMAGE is not a CODASYL-compliant DBMS, although it includes a majority of the features deemed desirable in a DBMS according to CODASYL. The trade-offs were made in areas where the CODASYL specifications called for increased flexibility at the expense of complexity. HP chose to greatly simplify the implementation of an IMAGE DBMS. These trade-offs

appeal to a majority of DBMS users, as indicated by the extreme popularity of IMAGE relative to any other DBMS system. When sales of IMAGE on all HP computers are totaled, there are more IMAGE systems around than any other DBMS in the world.

DG plans to market DG-DBMS to sophisticated users in the commercial and educational markets. The intended customers are both OEMs and "Fortune 500 companies with their own in-house programming staff." The strengths they will play on are the added flexibility (substitute "complexity" here!) of the CODASYL standard, maximum size of the data base, and features like ISAM, transaction logging, and rollback recovery. One thing they might avoid talking about is the memory requirements (a minimum of 768Kb). The strengths HP can play on with IMAGE/1000 is flexible language interface (FORTRAN, BASIC, PASCAL, and Assembly vs COBOL), ease of use, a more powerful inquiry facility (QUERY), and a substantial price advantage.

DG's other announcement was the adding of logging, hard crash recovery, and fast load utilities to INFOS, which now only runs under AOS (it used to run under RDOS as well). INFOS is not a DBMS; it is a File Management System. Therefore, its primary weaknesses are a lack of data independence and data security, extremely important features which are provided by a DBMS.

The following table summarizes the features of IMAGE/1000, DG-DBMS, and INFOS:

	HP IMAGE/1000	DG INFOS II	DG DBMS
<i>Creating the Data Base</i>			
Data independence	✓		✓
Security:			
item level	✓		✓
record level			✓
file level			✓
data base level	✓		✓
Partial keys		✓	✓
Variable length records		✓	✓
Control over record placement		✓	✓
Automatic Data Compression		✓	✓
<i>Querying the Data Base</i>			
Inquiry facility	Yes, QUERY	New, \$1000 extra	Read-only, \$2500 extra
Remote Data Base access	✓		✓
Batch capability	✓	✓	✓
<i>Host Language Access</i>			
Supported Programming languages	FORTTRAN-IV BASIC ASSEMBLY PASCAL	COBOL FORTTRAN-IV FORTTRAN-V RPG-II PL/I ASSEMBLY IDEA	COBOL
<i>Access Methods:</i>			
direct	✓	✓	✓
sequential	✓	✓	✓
hash	✓		
chain	✓		✓
index sequential		✓	✓
<i>Locking:</i>			
item level			✓
record level		✓	✓
file level			✓
data base level	✓		✓
Remote data base access	✓		✓
<i>Maintaining the Data Base</i>			
Backup utilities	✓	✓	✓
Capability to restructure data base	✓		
Transaction logging/recovery		✓	✓
<i>Miscellaneous</i>			
CODASYL compatibility			✓
Ease of use	Easy	Complex	Complex
Host computer system	HP 1000	Eclipse: C/150 C/350 M/600 MV/8000 AOS	Eclipse: C/150 C/350 M/600 MV/8000 AOS
Host operating system	RTE-IVB		
Maximum size	960 Mbytes	4400 Mbytes	4400 Mbytes
Price	\$3000	\$2500	\$9500

Popular Special Products

By Darrell Krulce/DSD

DSD's Special Systems Engineering group has the charter to leverage HP 1000 sales by developing and supporting specialized products that span the gaps that may exist between our standard products and our customer's needs. Special products range in complexity from non-standard length cables to the integration of a high speed analog to digital front-end into an HP 1000 system. Special products are produced at a profit and represent a significant amount of business for DSD both from the specials themselves and the standard products that they help to sell.

Many of the specials that have been developed have been sold many times and have become very popular with our customers. Following is a list of some of these "standard" specials to give you an idea of what is available from the Special Systems Engineering group.

93584T/V: TEK Interface

Provides a high speed (50KHz) interface to TEK 4010, 12, 14, 15 graphics terminals.

93596L: Preston Analog to Digital subsystem

Provides the interface and software necessary to operate a customer supplied Preston ADC (Preston Scientific, Anaheim, CA) for high speed data acquisition.

93592R: HP-IB Interface for 3455A/3495A Scanner

Provides a driver to operate a 3455A DVM and up to (5) 3495A Scanners at speeds greater than 20 readings per second from the 59310B I/O card.

93590P: General Purpose High Thruput Driver

Provides a driver capable of "continuous" thruput of data at rates of up to 50KHz between an external front-end device and a mass storage unit.

93587S/T: High Speed Thruput to Disc
Provides a "dummy" driver for continuous input from a device to a 7920/25 disc at rates to 250KHz and to a 7905/06 disc at rates to 200KHz.

93552A: General Purpose 16 bit I/O Driver

Provides a driver capable of general purpose operation of many of the 16 bit I/O cards including the 12930A, 12566A/B, 12597A and others.

93583B: General Purpose RS-232 Terminal Driver

Provides a 12966A driver capable of operating a non-handshake "dumb" terminal using modem or hardware operation.

93584V: General Purpose RS-232 Device Driver

Provides a 12966A driver capable of operating "dumb" RS-232 devices using a hardwired connection.

93546A: EIA to 20MA Current Loop Converter

Provides full duplex current loop line levels for connection to HP 264X terminals or other current loop terminals at distances of 1000 ft or more. The 12966A card is used for the computer interface.

93585A: Double Precision Integer Firmware for E-Series

Provides the equivalent microcode of the double integer routines available in the F-series computer for the E-series computer.

93762A: High Speed Parallel CPU to CPU Link

Provides a high-speed 16 bit full duplex parallel CPU to CPU data link between two 21XX series computers.

93768A: Watchdog Timer

Provides a "watchdog timer" with three software programmable ranges. This timer uses a Form C relay for external sense.

93550A: I/O Switch

Provides I/O switches that allow two computers to share up to seven peripherals. This special, when combined with the 93762A and 93768A, provides the basis for redundant configurations.

12589A-A02: Automatic Calling Unit Interface

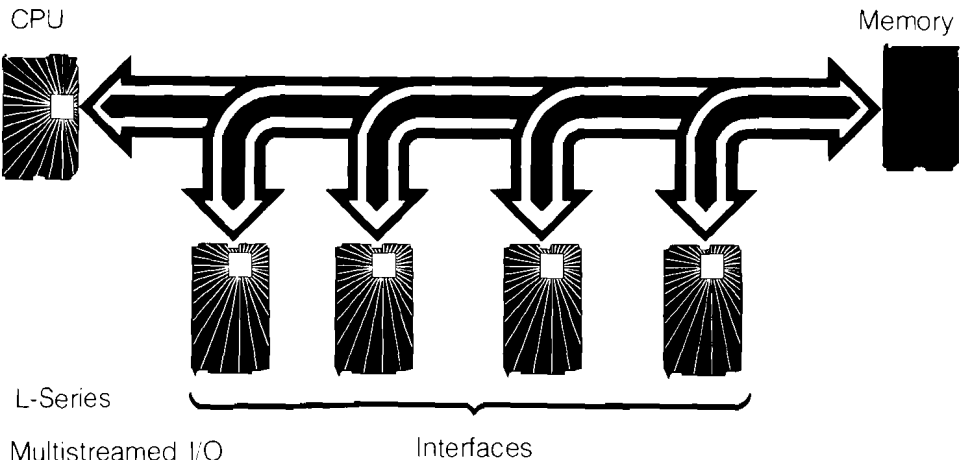
Provides a driver for the 12589A automatic calling unit interface for a Bell 801 Automatic Calling Unit.

If your customer needs one of these Specials or some other special product, call your Sales Development Engineer.

L-Series Distributed Intelligence Architecture Explained

By David Aune/DSD

A computer's power comes from its ability to accept inputs from outside sources, modify these inputs according to a given set of rules, and output the results of these computations to some external device. The L-Series computer's ability to perform input and output data transfers at a very high rate has opened the door to many new opportunities for this exciting new minicomputer. It has also brought up many applications questions about the L-Series I/O system. Let's look at some of these:



What does I/O distributed intelligence mean?

In a typical computer architecture, computation and input/output are usually both controlled by the CPU. In the L-Series Computer, the central processor is relieved of the burden of I/O processing by assigning that function to individual I/O processors on each interface card. All I/O instructions are executed by the I/O processors allowing each I/O interface to manage its own I/O operations autonomously. This simplifies programming and interface design while providing more efficient I/O processing as well as decreasing CPU overhead.

The bottom line — the more I/O intensive the application is, the more advantageous the L-Series distributed intelligence architecture becomes.

Why does DMA improve throughput?

There are a couple of reasons why Direct Memory Access (DMA) improves throughput. First, direct access to memory from an I/O device means that data can flow directly from I/O to memory and bypass the CPU. This saves the time required to transfer data from the I/O device to a register on the CPU to memory plus the overhead of processing the interrupt each time a piece of data is transferred. Therefore, a fast device can transfer data into memory faster under DMA than it could if it interrupted the CPU for every word (or byte) of data transferred.

Second, DMA means that the I/O system keeps track of which card is transferring the data, where the data is going and how much data there is. For example, even if a slow device like a terminal transfers data to memory under DMA, the I/O system will automatically take care of the actual data transfer. This makes programming easier.

What does DMA per channel mean?

The DMA capability of each L-Series I/O interface provides a direct path between memory and a peripheral device. Thus, the DMA per channel capability can be used for all data transfers. The use of DMA to perform I/O data transfers reduces the number of interrupts from one per byte or word to one per complete DMA block transfer (up to 65,536 bytes)!

What's cycle steal DMA?

In cycle steal DMA, each I/O processor on every I/O interface which is performing DMA transfers alternates control of the backplane buses with the other I/O processors and the processor card. The priority order in which everybody "steals" access to memory (i.e. memory cycles) is determined by the I/O interface position along the card cage bus. The I/O interface closest to the processor card has the highest priority, with the other interfaces farther from the processor having successively lower priority. The CPU card has the lowest priority. Anytime an I/O interface needs access to memory for a data transfer, it will "steal" the next memory cycle as long as no higher priority I/O interface has already taken the cycle. In the case where the memory cycle has already been taken, the interface will "steal" the next available memory cycle.

What is the maximum backplane DMA rate?

The L-Series can perform concurrent input and output data transfers at a cumulative rate up to 2.7 million bytes per second. This rate can be achieved by several cards with individual transfer rates of less than 2.7 megabytes/second by "cycle stealing" every available memory cycle. Remember that this is the rate the backplane and memory can achieve, the DMA transfer rates of the individual I/O interfaces are calculated according to how fast the card or I/O device can accept or transmit data.

What's the DMA latency time?

The DMA latency time is defined as the interval from a "request for service" by an I/O device through completion of the I/O data transfer. For example, if a character is to be output, the DMA latency is the time between the card requesting service (asking for the next character) to the time the character is actually available to the device (usually in a data register on the I/O interface card). Basically this is the time needed for the specified I/O processor and related circuitry to perform all the necessary handshaking to transfer one word between memory and an I/O interface under DMA. For an input transfer, the time is 0.908 microseconds and for an output transfer, it is 1.362 microseconds. A read from memory (an output transfer) requires more time than a write to memory (an input transfer) because of the time needed to address the specified memory location and retrieve the contents. A write to memory is quicker because it supplies the memory address at the same time.

What is the maximum DMA transfer rate for an I/O interface?

It is interesting to note that the maximum input rate of any one I/O processor is related to the inverse of the input DMA latency time. This is why the maximum rates are different for input transfers than output transfers.

Input: 2.2 megabytes/second

Output: 1.46 megabytes/second

Each I/O interface's maximum DMA transfer rate depends upon the I/O processor transfer rate above and also upon the manner in which the device specific interface logic handshakes with the I/O processor. This is the reason why the various I/O interfaces for the L-Series have different transfer rates. The following table lists the transfer rates for the L-Series I/O interfaces.

	Maximum DMA Transfer Rates	
	Input To Memory	Output From Memory
12005A Asynchronous Serial	56,000 BAUD	56,000 BAUD
12006A Parallel	2.1 Mbytes/sec.	1.4 Mbytes/sec.
12008A PROM	2.1 Mbytes/sec.	n/a
12009A HP-IB	0.94 Mbytes/sec.	0.94 Mbytes/sec.

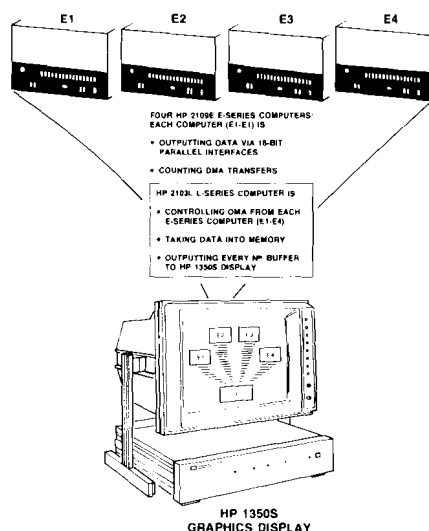
In order to achieve this maximum rate, there can be no other higher priority I/O interfaces performing DMA transfers (i.e. stealing cycles). Typically, there are other data transfers occurring on the backplane which degrade the maximum possible DMA rate for short periods of time.

From these figures, it becomes obvious that any one I/O interface cannot use the whole DMA backplane. It takes several I/O interfaces all doing data transfers at once to utilize the whole 2.7 million bytes per second backplane DMA rate.

What does all this mean? An L-Series application

Let's look at an example application of the L-Series Computer to tie all this information together. The application consists of connecting an L-Series Computer to four E-Series Computers as high speed devices. The L-Series will receive the data from the four E-Series Computers and will selectively send out the data to an HP-IB Graphics Display Station (HP 1350S). The communications link between the computers will use 12006A Parallel Interfaces in the L-Series Computer and 12566A Microcircuit Interfaces in the E-Series Computers. Refer to the figure opposite for a diagram of the set-up.

L-SERIES COMPUTER I/O THROUGHPUT DEMO



The transmitted data will be graphic pictures in the format needed for the Graphics Display Station. This allows the L-Series to perform as a data collector — no data conversion or data reduction is needed.

Each of the E-Series Computers will have a short assembly language program to transmit the data for one graphic picture using a DCPC channel on request from the L-Series Computer. At the completion of the DMA transfer, the program will set up for another transfer and then wait for another input request from the L-Series.

The L-Series Computer has a total of five DMA channels: four for the Parallel Interfaces and one for the HP-IB Interface to the Graphics Display Station. Each of these DMA channels will be interrupting asynchronously. Because minimum interrupt response time is required for the highest throughput rate, ASSEMBLY language will be used to write the L-Series data transfer controlling program. The L-Series Computer receives data via a DMA transfer from the parallel interface connected to the E-Series computer. The data transfer is handled by the I/O processor on the Parallel Interface and interrupts the CPU when the transfer is complete. Each of the four E-Series computers transfers data in the same way. The L-Series computer manages each of these transfers by deciding when to route the data out to the Graphics Display Station. Only a small percentage of the transfers are actually sent out for display because the Graphics Display Station has a low data transfer rate.

Internal to a DMA transfer, the channel is transmitting at a rate of 0.6 Mbytes/sec. This is measured with the use of a logic analyzer. The overall throughput, including the overhead of the interrupt service routine, is shown in the following table.

Transfer Rates

Peak DMA Transfer Rate
from each E-Series
Computer: 0.6 Mb/sec

Backplane Bandwidth of
HP 2103L L-Series
Computer: 2.7 Mb/sec

Realized Throughput

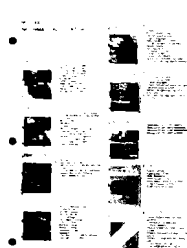
E1:	32,768 transfers 65.4 seconds	× 720 bytes transfer.	= 0.36 Mb/sec
E2:	32,768 transfers 124.9 seconds	× 1728 bytes transfer	= 0.46 Mb/sec
E3:	32,768 transfers 124.9 seconds	× 1728 bytes transfer	= 0.46 Mb/sec
E4:	32,768 transfers 65.4 seconds	× 720 bytes transfer	= 0.36 Mb/sec
			Total = 1.64 Mb/sec

This application can be extended to include a Parallel Interface to transmit data to a data collection computer (for example another E-Series computer or an F-Series computer). The L-Series Computer can then be used as a high speed data multiplexer or data concentrator.

New HP 1000 Information Locator

By Ted Proske/DSD

Complaints about the difficulty of finding information in our HP 1000 data books have now been at least partly answered by a new HP 1000 Information Locator (5953-4240), which provides product number reference to data in nine different DSD data books. To further simplify access to our detailed technical information, we are also in the process of consolidating



HP 1000 data books so that by the end of this year there will be only about four data books, excluding the 2240A data book and any other data books that deal with instrumentation.

Compatible Peripherals for the L-Series

By Jim Anderson/DSD

Following is an updated list of peripherals specifically tested with the L-series:

Disc Drives:

7910HR	Winchester Disc Drive
7906H	Cartridge Disc Drive

Line Printers:

2631A	HP-IB Line Printer (or RS-232) Order Opt. 214 for L-Series Cable.
9871A	Printer (Requires internal switch be set to disable parallel poll).

System Consoles:

2621A/P	Terminal
2635A	Printing Terminal
2644A	Terminal
2645A	Terminal
2647A	Terminal
2648A	Terminal

Note: 2146A/B comes with a 2621 cable. Other system consoles require ordering the cable separately!

Additional Terminals:

2621A/P
2635A
2644A
2645A
2647A
2648A

HP-IB Peripherals:

2240A	Measurement and Control System
3455A	DVM
3437A	DVM
59401A	BUS Analyzer

Miscellaneous:

2600A	CRT Terminal
2752	Teletype
	Data I/O System 19 Prom Burner
2985B	Tape Punch (old cable and hood are compatible with 12006A Parallel Interface)
2748B	Tape Reader

The following devices are in the process of being certified:

9872	Graphics Plotter
9874	Digitizer
7245	Plotter/printer
12050A	Fiber Optics link

DCD

New 35mm Slide Show for Seminar Selling Technical Computers

By Mike Radisich/DCD

"Technical Computer Applications in Industry" (140 35mm slides) is a concept talk intended to position desktop and minicomputers to raise awareness about how to use them, and to clarify the selection process. Designed for first-time users or non-computer professionals, scientists, engineers and managers in industrial accounts, the slide show:

- describes the two classes of technical computers most often selected for scientific and engineering applications in industry (12 minutes).
- Then illustrates how they're used (14 minutes).
- Finally, it explains how to logically select the "right" one for a given application (9 minutes).

To order the slide show, transmit a HEART (Cochise) I-2 order to Software Distribution Center in Sunnyvale: COM-SYS Location 5006, PT02, Product Line 68, Marketing Division 50, Supplying Division 5006, Price (Please Advise)*. P/N 11141-70340. OP questions can be answered by Jeff Nagle at SDC, (408) 738-8858, Ext. 232.

*Expected price around \$200 per set, which includes slides plus illustrated script (and "How to" instructions).

The slide show is designed for optimum delivery using two projectors with a dissolve unit (which fades one slide out and the next slide in). One projector can be used, but requires carousel replacement after slide #80.

This show is an ideal way to open any seminar, whether given at a key account or used for territory development.

DCD Datacomm Products Compatibility

By Kevin Cornelius/DCD

With the new desktop data communications products being introduced to the new integrated sales force, there is confusion about which products are required with which. The following table should dispel some of the confusion.

When Plot 10 graphics compatibility is specified, it is in respect to a Tek 4010 terminal. We cannot emulate any other type of Tektronix graphics terminal.

Mainframe	Interface Card	Type of Connection	ROMs Needed	Software Available	Max. Speed With and Without Enq/Ack Handshake
9835A	98036	Async	I/O (98332A) (Topen Binary in Term. Emulator Pack)	Async Terminal Emulator 09835-10040	9600/600
9835A (Opt 201 & 98337A Plotter ROM required for plot 10 graphics mode, plotters are 9872B or 7225)	98046	Async	Basic data comm (98317A) and /O (98332A)	High Speed Async Terminal Emulator 09835-10180	9600/1200-2400* *depends on line length
9835A Opt 201 required	98046	Bisync	Basic and RJE Bisync data comm ROMs (98317A/98318A)	2780/3780 Terminal Emulator 09835-10190	9600
9835B	98036	Async	I/O (98332A) (Topen Binary in Term. Emulator Pack)	None	—
9835B	98046	Async	Basic data comm (98317A)	None	—
9835B	98046	Bisync	Basic & RJE Bisync data comm (98317A/98318A)	None	—
9845A Opt 203 required	98036	Async	I/O (98432B) (Topen Binary in Term. Emulator Pack)	Async Terminal Emulator 09845-10040	9600/600
9845B (Opt 311 Opt 700 required for plot 10 graphics)	98036	Async	I/O (98412A)	Async Terminal Emulator 09845-10140	9600/300
9845B (Opt 204 Opt 311 Opt 700 required for plot 10 graphics)	98046B	Async	Basic data comm (98417A)	High speed Async. Terminal Emulator 09845-10180	9600-1200-2400* *Depends on line length
9845B Opt 204 required	98046	Bisync	Basic and RJE bisync data comm (98417A/98418A)	2780/3780 Terminal Emulator 09845-10190	9600

9845C	98036	Async	I/O (98412A) Tdisp will not work with 9845C	Async Terminal Emulator will not run on 9845C!!	
9845C **(Plot 10 graphics com- patible when modifications mentioned below are made)	98046	Async	Basic data comm (98417A)	High speed Async Terminal Emulator 09845-10140 (**Needs some modification)	9600/1200-2400* *Depends on line length
9845C	98046	Bisync	Basic and RJE Bisync data comm (98417A/ 98418A)	2780/3780 Terminal Emulator 09845-10180	9600

** The modifications necessary for the 98046 asynchronous graphics mode emulator to run on the 9845C are as follows. *Adhere to these instructions exactly!*

- Before making any modifications, the following must be done:
 - Type, SCRATCH A (execute)
 - Insert tape containing "GRPMOD" in right tape drive
 - Type, LOAD "GRPMOD" (execute)

NOTE: Do not purge GRPMOD file from tape!

 - Type, SAVE "CGRMOD" (execute) !This takes DGRAPH binary out of the program
 - Type, SCRATCH A (execute) !This removes DGRAPH binary from memory
 - Turn machine off and remove I/O ROMS if they are present
 - Turn machine on
 - Type, GET "CGRMOD" (execute)
- The 9845C doesn't have GPRINT
Delete line 6760 and replace line:
6755 LABEL USING "#,K";R\$[1,Gptr-1]
- To turn off the alpha screen when graphics is on:
Replace/add these lines:
7261 IF Gscreen THEN EXIT ALPHA
6461 ALPHA
6516 IF Gscreen THEN EXIT ALPHA
- After the desired modifications are made, type:
PURGE "CGRMOD" (execute) !Removes "saved" file from mass storage
STORE "CGRMOD" (execute) !Puts stored version on tape

The above list should provide a good starting point to determine which products work with which.

The second area of confusion is with cables. Each interface card (98036 and 98046) has two possible options to choose from when ordering. They are the standard option and Option 001. The standard option terminates the interface cable with a female, 25-pin connector. This is used most in direct connections to terminals or host computers that have male connectors terminating their cables. Option 001 terminates the interface cable with a male, 25-pin connector. This option is used to interface modems, and is used in about 85% of all data comm installations.

If the customer orders the incorrect option on the 98036 or 98046 interface, there is a part number you can order to get just the cable and 25-pin connector. This cable replaces the original cable supplied with the card, and just plugs in.

*98036-67902 provides a cable with 25-pin female connector.

*98036-67903 provides a cable with 25-pin male connector.

*Note: the above numbers are only for the 98036 interface card!

**98046-61600 provides a cable with 25-pin female connector.

**98046-61601 provides a cable with 25-pin male connector.

*Note: the above numbers are only for the 98046 interface card!

Please note that only the asynchronous graphics mode emulator for the 98046 interface needs to be modified to run on the 9845C. The line and key mode emulators need not be changed if they are kept in their "stored" version.

System 45 Option Price Increases

By Dave Morse/DCD

Effective July 1, the prices for the built-in thermal printer and second tape drive for the 9845B/C will be raised as shown below.

Thermal Printer	Old List	New List
9845B/C	\$3000	\$3700
Opt. 540, 541, 560, 561		
98454A, 98456A	3100	3800
Second Tape Transport		
9845B/C Opt 600	900	1100
8460A	1000	1200

Prices for the 9845B (\$14,000) and 9845T (\$23,500) will not be changed, so the "T" is even a better bargain than it was before. The customer now gets a 13% discount on a 9845T compared to purchasing a 9845B and adding the options.

A 9825 CRT

By Jim Fentress/DCD

The \$1,600-\$2,600 price of the 2621A/P terminal makes it an attractive companion to the 9825A/B desktop computer. The 9825's high computational and I/O speed, combined with the 2621 terminal's 80 x 24 CRT display and optional 80-column line printer, offers a unique solution for many measurement and test applications.

The 9825 can easily control the 2621A/P terminal to display data for operator prompting, and for program listing and editing. Simple write-binary statements send the escape code sequences necessary to access terminal features such as cursor control.

A 9825 program has been written and documented to illustrate some of the capabilities of the 9825/2621 combination. The HPL program is itself a program editor, and uses features provided by the 9825 Systems Programming ROM. It allows HPL program lines to be edited on the 2621 screen, then recalled and stored into the 9825's program memory. The program demonstrates other capabilities, including "on key" programming, CRT and hard-copy listing at 9600 baud, and search and replace operations on user programs.

Documentation of the 9825/2621 configurations, equipment required, and program listings are available on request from Jim Fentress, PL97 Sales Development, DCD, Ft. Collins. A magnetic copy of the 92-line program will also be provided if you send a blank tape with the request. (Please note that this is an *example* program only, and is *not* supported! Its purpose is to illustrate some interesting programming techniques not immediately obvious to many users, not to justify purchasing a 9825/2621 system.)

Don't Miss I/O Series

By Bill Sharp/DCD

The great series of I/O articles by Steve Leibson of DCD that has appeared in *Instruments & Control Systems* magazine was reprinted from *Keyboard* magazine, DCD's post-sales customer support publication provided free to all DCD customers. And while the series in *I&CS* is concluding, you can still find three more installments in *Keyboard*. The series has been used by several sales offices as an aid in customer training courses for customers trying to understand I/O.

Topics included in the series, which began with the Jan/Feb 1979 issue and which will conclude in the Nov/Dec 1980 issue, have been Parallel I/O, HP-IB, Serial I/O, BCD, Interrupts and DMA. Some of

the *Keyboard* issues featuring these topics are still available. The series has generated more than 1,700 leads so far. We are considering reprinting the entire series and would like to know your feelings about this.

System 45 Pricing Information Sheet Error

By Kevin Cornelius/DCD

There is an error in the recommended equipment list for the Job Cost Accounting software pack, P/N 09845-12910, in the System 45 Pricing Information Sheet. This pack requires Opt. 204 (18 Kbytes R/W memory) in order to run. The pricing sheet makes no mention of this. Please update your pricing sheet accordingly.

Scientists and engineers
computer systems powerful

find today's desktop
graphics tools.

Why?

The Power of HP Graphics. Today's Hewlett-Packard desktop systems offer an impressive array of powerful graphics capabilities to help you analyze data more thoroughly and solve complex problems more quickly. With both full-color and monochrome displays, and a broad range of HP input, output and storage peripherals, it's easy to take a graphics system to match your needs. And, you'll realize benefits that reach well beyond the power of display graphics. HP systems today give you powerful computing capabilities with user available memory to 640K bytes, high performance I/O data base management, and main memory options to 120M bytes. Whether you're computing, optimizing a design or acquiring data from instruments, HP graphics systems put the computer power under your individual control. An Interactive System. Your data can be entered in a number of ways. You can use the desktop computer's interactive key board. Or, if you're

working with drawings, photographs, maps and other graphic material, the HP Digitizer enables you to transfer this data to the computer. System 45's Light Pen provides a natural way to let you move and construct objects on the system's CRT screen.

Handle the Way You Want Them. Your HP graphics system will let you choose the way you want your results presented. You can display your solutions on the desktop computer's CRT screen, and the image can be dumped onto the

quality output, can also be obtained from HP plotters. When your system is assembled to give you the graphic results you want, HP's high-performance language and industry standard I/O will ensure smooth interaction amongst the components.

Advanced Graphics Language. To rapidly develop graphics of complex data, HP's high-performance language, HP-GL, is available on a number of HP desktop systems. The HP-GL is a standard, portable language that can be used on a wide range of HP desktop systems. It's easy to learn and use, and it's powerful. HP-GL can be used to create a wide range of graphics, from simple line drawings to complex, shaded images. It's a powerful language that can be used on a wide range of HP desktop systems.

Expanded Capabilities. The power and flexibility of your HP graphics system can be expanded in a number of ways. You can add a high-resolution plotter to your system, or a high-resolution printer. You can add a high-resolution scanner to your system, or a high-resolution digitizer. You can add a high-resolution camera to your system, or a high-resolution video camera. You can add a high-resolution microphone to your system, or a high-resolution speaker. You can add a high-resolution keyboard to your system, or a high-resolution mouse. You can add a high-resolution trackball to your system, or a high-resolution joystick. You can add a high-resolution touchpad to your system, or a high-resolution touch screen. You can add a high-resolution touch screen to your system, or a high-resolution touch screen. You can add a high-resolution touch screen to your system, or a high-resolution touch screen.

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During the recent NPT Tour, most SRs received a copy of this advertisement in four colors, representing a major effort to publicize our expanded computer graphics and color graphics capabilities. Appearing in the June, July and August issues of *Electronics*, *EDN*, *Machine Design*, *Design News*, *Industrial Research/Development* and *Science*, it should result in many good leads, which we will distribute promptly to the DMs.

Business Computers

GSD-BSP

HP Climbs in The Small Computer Market

By Steve Wilk/GSD

1979 Top 10 US Small Computer Suppliers (For Systems selling between \$15,000 and \$200,000)

Source: DATAQUEST

	Sales (\$ millions)	Market Share	Growth Rate
IBM	3,700	29.2%	21%
DEC	1,800	14.2	26
HP	962	7.6	45
Burrough's	560	4.4	12
Data General	525	4.1	28
NCR	450	3.5	13
Texas Instruments	420	3.3	31
Honeywell	330	2.6	40
WANG	320	2.5	52
Datapoint	275	2.2	41

BSP's Best Sales People

By Serge Daoust/GSD

Business Systems Program Bestows Special Praise on its Best Sales People

April 1980

Jim Banisch	HP 250	Baltimore
Ruben Berron	HP 250	Mexico
Keith Clark	HP 250	Rochester
Ken Fairbanks	HP 250	Brookhollow
Jon Jacobson	HP 250	West Valley
Joe Kail	HP 250	Cincinnati
Mark Lukowski	HP 250	London, Canada
Bill Murphy	HP 250	Woodbury
Lee Nordseth	HP 300	Palo Alto
Tom Orteiz	HP 250	San Diego
Leon Snobel	HP 250	Toronto
Howie Soukup	HP 250	Rolling Meadows
Lou Stover	HP 250	Denver
Glen Surbey	HP 250	Rockville
John Trudeau	HP 300	Santa Clara
Phil Weaver	HP 250	Ottawa

North America and ICON only. Europe will be included beginning with May.

Introducing FIN/250

By Scott Oki/GSD

Finally ... FIN/250! Your OEMs have been screaming for it; their customers demand it; now we can provide it. FIN/250 is a general accounting solution that runs on the HP 250. It is made up of three modules that provide the hub of an accounting solution that practically every small business can use: General Ledger, Accounts Payable, and Accounts Receivable.

FIN/250 complements the lifestream capabilities of MFG/250 (for discrete manufacturers) and OM/250 (for hardgoods distributors). Armed with these three application software products, the HP 250 offers powerful solutions for those areas where small manufacturers and distributors can benefit the most through the use of an in-house computer system.

For service oriented industries (medical clinics, accounting firms, lawyers' offices, etc.) the combination of Accounts Payable, General Ledger, and Accounts Receivable is the lifestream of their business. FIN/250 should be very attractive to this market segment.

You can order FIN/250 in either a two or three-module configuration:

- 45200A FIN/250 (3 modules:
GL, AP, and AR) \$7,500
- 45199A APGL/250 (2 modules:
GL and AP) \$5,000

Consistent with MFG/250 and OM/250, your customers will be purchasing a source code product, with the right to copy onto as many HP 250 systems as they want, at no charge. So, tell your OEMs that FIN/250 is now available to help them provide a total solution on the HP 250.

FIN/250 Qualifier

One of the most difficult tasks associated with applications software products is how to adequately and accurately specify capabilities.

To help you understand what FIN/250 can and cannot do, and to help your OEMs in preparing responses to RFPs, we have developed a document called the

FIN/250 Qualifier. This qualifier is a compilation of answers to over 180 questions relative to the three modules in FIN/250 (General Ledger, Accounts Payable, and Accounts Receivable).

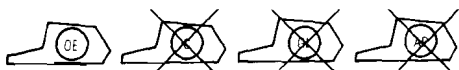
We will be distributing limited copies to each third party SR and HP 250 SE. If additional copies are needed, please contact your sales development specialist in the factory.

Software Products: Single, Multi, and in Between

By Scott Oki/GSD

With three applications software products (MFG/250, OM/250, and FIN/250) that can run on an HP 250, it is important to understand what is and what isn't multi-user.

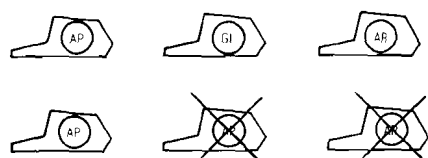
OM/250 is single user. This means that when Order Entry, Inventory Control, or Sales Analysis are in use at one terminal, no other terminal can perform any OM or FIN function at the same time.



MFG/250 is multi-user. This means that any function not requiring exclusive access to the data base can be executed from one to six consoles simultaneously.



FIN/250 is in between. This means that FIN/250 can run from a single console, or each FIN/250 module can run at its own console simultaneously. However, any single module within FIN/250 cannot be run at multiple consoles at the same time.



HP 250 Makes Datapro!

By Kim Voots/GSD

The April 1980 Datapro article on the HP 250 included a user survey in which the 250 rated a 3.8 out of 4 on overall satisfaction!

The following table shows how the 10 users rated the HP 250:

	Excellent	Good	Fair	Poor	WA*
Ease of operation	8	2	0	0	3.8
Reliability of mainframe	6	4	0	0	3.6
Reliability of peripherals	3	5	2	0	3.1
Maintenance service:					
Responsiveness	7	2	1	0	3.6
Effectiveness	7	2	1	0	3.6
Technical support	3	2	1	0	3.3
Manufacturer's software:					
Operating system	6	4	0	0	3.6
Compilers and assemblers	5	3	0	0	3.6
Ease of programming	4	2	0	0	3.7
Ease of conversion	1	1	1	0	3.0
Overall satisfaction	8	2	0	0	3.8

*Weighted Average on a scale of 4.0 for Excellent

Pick up Datapro and read all about it!

2631B on the HP 250/300

By Scott Oki & Ken Filcoff/GSD

With the most recent release of the operating system on the HP 250 (revision 3.0), we will be able to support the 2631B printer that Boise Division recently introduced. However, the 2631B will only run off the main console. Remote consoles only support the 9871A and 2631A printers. The 2631B joins a family of printers that are already supported on the HP 250: the 9871A, 2631A, 2631B, and the 2608A.

The HP 300 also supports the new 2631B Serial Printer. Amigo/300 Operating System release A.04 will treat the 2631B as a logical 2631A, with the exception that programmatic control over horizontal tabs is lost (users can still take advantage of the 2631A's escape sequence-accessible printing enhancements). To take advantage of Boise's new, more reliable 2631B on the HP 300, order the

2631B with option 330. The cost (with option 330) is \$3,950 and includes HP-IB interface and 2m HP-IB cable.

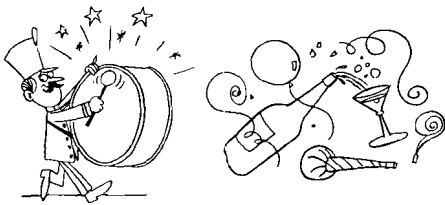
HP 250 As a Remote Printer/Controller!

By Charles Dixon/GSD

Ed Oakley and his sales team have closed a large order with a group of hospitals in Virginia where HP 250s will be used as remote printer/workstations for a HP 3000 Distributed System network. The 250's with INP's and 2608 line printers will initially serve as an RJE station connected to the 3000 network for transfer of patient information from remote hospital locations. The installed 250 systems will later be expanded to maintain a local patient database using IMAGE and QUERY.

This is an intelligent way of solving the problem of remote 3000 printers.

HP 3000



Materials Management/3000 Shipments Begin

By Rich Stearns/GSD

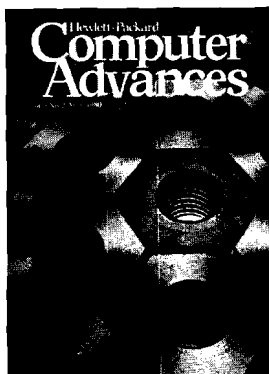
It's cause for celebration! As scheduled, Materials Management/3000 was released on June 2, 1980, and volume shipments have begun to those customers who wished to have their systems installed in June. Another step in establishing HP as the leader in the manufacturing applications marketplace!

Materials Management/3000 Sales Literature

By Rich Stearns/GSD

More sales literature on Materials Management/3000! Here are three pieces to help you at each step in penetrating manufacturing accounts.

- Special *Computer Advances* reprint (P/N 5953-0857D)
- Six pages on HP's new approach to software technology
- Excellent direct mail piece for seminars and as lead generators



Computer Advances

- Four-color, 12-page management introduction (P/N 5953-0586)
- Emphasizes benefits of implementing user customizable, interactive systems for materials planning and control
- Use this to give managers a high level introduction to HP Manufacturing Systems

HP Manufacturing Systems
Interactive application products
for manufacturing

MANAGEMENT SUMMARY



Management Summary

- Comprehensive management-oriented view of all product and customization features (P/N 5953-0587)
- Includes product reference sheets
- Use it with technical specifiers to help them evaluate Materials Management/3000

HP Manufacturing Systems
Interactive application products
for manufacturing

GENERAL INFORMATION MANUAL



General Information Manual

Materials Management/3000 Coverage

By Rich Stearns/GSD

Numerous publications for manufacturing and data processing audiences have reported on the features and functional capabilities of Materials Management/3000. Many went beyond the content of our press release on the product: one featured Materials Management/3000 on the cover (*Materials Management and Distribution*); another focused on HP and Materials Management/3000 in a broader discussion of successful automated manufacturing systems (*Infosystems*). To date, the following articles have appeared:

HP 3000s Gain Package for Materials Management

Computerworld Feb. 4, 1980

Meeting the Challenge of Materials Control Computers: key developments put control in hands of users

Materials Management and Distribution Feb. 1980

Customizing is a Feature of New Materials Management Package

Canadian Datatypes Feb. 1980

HP Offers New Software for Planning and Production Scheduling

Information Systems News Feb. 1980

HP Replacement for MFG/3000

Electronic News March 10, 1980

Users Customize, HP Maintains

Mini Computer News March 20, 1980

MRP Software Program Allows Customization Without Further Reprogramming

Industrial Engineering March 1980

This MRP is Friendly

American Machinist March 1980

Computers in Manufacturing (Special Advertising Section)

Iron Age April 1980

Software Spotlight Manufacturing Systems

Datamation April 1980

Manufacturing Systems: Living up to Expectations

Infosystems April 1980

New Documentation Available for Edit2/3000

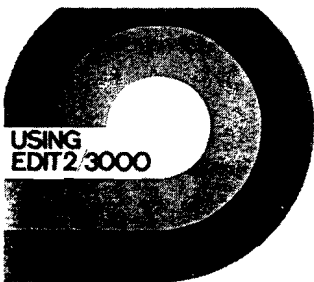
By Rich Edwards/GSD

New documentation for the EDIT2/3000 contributed library text processing program is now available from the HP General Systems Users Group.

Called "Using EDIT2/3000", this 150-page manual shows how simple it is to use the HP 3000 for text processing with EDIT2/3000. An easy-to-read, practical guide, it illustrates each topic with actual examples and will help your customers use this contributed program for text processing applications.

HP General Systems Users Group
Contributed Library

Extended Documentation



Copies can be ordered from the HP General Systems Users Group, at Empire Towers, Suite 414, 7300 Ritchie Highway, Glen Burnie, Maryland 21061 USA for \$10 (US) each. Enclose a check with your order (checks from organizations outside the US must be drawn in US funds and on your bank's correspondent US bank).

BGD

HP 300 and Foreign Character Support

By Mike Barlow/BGD

To correct any misunderstanding in the field about what support the HP 300 has for local character sets in Europe, a resume of the current status is shown below:

Since its introduction, the HP 300 has inherently had the ability to handle the full USASCII character set *plus* all European characters. These are accessible on any European system (and on the US systems with 31227A). This is done by use of an 8 bit code and the Roman Extension Set. For any particular country keyboard option, all characters used in that language are available on the keyboard, plus the ability to access characters in other languages by use of an alternate keyboard definition.

External peripherals can be divided into three different categories as far as their capability to handle European characters is concerned:

1. Devices with full 8 bit code compatibility with HP 300
 2. Devices using 7 bit codes and ISO substitution characters
 3. Devices with no European character sets
1. 8 bit HP 300 Compatible Codes
2621A Character Terminal with Option 001 to 006.
2631A 180 cps Printer & Option 009.
2631B 180 cps Printer & Option 009. (Supported like a 2631A).
2608A 400 lpm Printer & Option 002.
These devices present no difficulty to the user or programmer, and complete consistency exists in the way they handle European characters with the HP 300.
 2. 7 bit Codes with ISO substitutions
2640 Character Terminal. 'B' with Option 005 or 'N' or 'S'.
2645 Block Mode Terminal. 'A' with Option 005 or 'N' or 'S'.

To use these devices requires a permanent conversion subroutine to be running in the HP 300, which is translating 7 bit substitution characters to 8 bit Roman Extension Characters.

3. No European Character Set
2635A Printing Terminal
307X Datacap Terminal

These devices are, of course, usable only in a USASCII mode.

Note: Beware of attaching any foreign devices to the HP 300. At best, these will fall in category 2, and typically in category 3.

Other articles relevant to this subject can be found in CS Newsletter: Vol. 4, #14 Roman Extension Set & Conversion Subroutines; Vol. 4, #20 2631A Ordering Details; Vol. 5, #8 2621A/P Ordering Details; Vol. 5, #13 2631B Support Matrix. See also the 5953-2035 2621A/P Data Sheet.

Data Capture Procedures

By Alan Nonnenberg/BGD

During May, BGD and GSD distributed an introduction packet about Data Capture Procedures to all commercial SRs and SEs. The software is ready, and the manual can be ordered as P/N 32243-90001 at \$10 US.

Software has been distributed to all commercial SE DMs worldwide, to work with IT 1918, and Athena. This software, including a demo program, is for use in sales offices as a demo tool for your customers. The Procedures will appear as part of the "Bruno" MIT this summer for standard customer distribution.

As explained in the introduction packet, the software is included with MPE at no extra cost to your customer. He/she only needs purchase the manual and some 307X terminals to get started.

Remember, data capture is a natural extension of many applications already running on HP 3000s. Using the Data Capture Procedures and HP 307X terminals provides a low-risk way to enhance commercial applications on the HP 3000.

Terminals

DTD

DTD Has Moved

By Dave Williams/DTD

Unsuccessful in reaching Data Terminals Division in Cupertino? Try Sunnyvale! June 6 marked the completion of the Division's move to our Sunnyvale location.

With manufacturing, marketing, order processing and the lab now all under one roof, DTD will be in an even better position to provide you with continued outstanding support.

Our new address: 974 E. Arques Avenue, Sunnyvale, CA 94086 (408) 735-1550

Announcing the National 2621P

By Wendi Brubaker/DTD

If you've been patiently waiting for National character support on the 2621P, wait no longer. You can place your orders today! As with the 2621A the printer version comes in six new flavors:

- 001 Swedish/Finnish
- 002 Norwegian/Danish
- 003 French
- 004 German
- 005 UK
- 006 Spanish

Each option provides a national keyboard, and national characters on both the display and internal printer for only \$100. Delivery will begin in July for both the 2621P and its upgrade kits. For more information on the National options refer to the Data Sheet (5953-2035) and the User Manual (02620-90032).

16K RAM Instead of 8 With the 2648!

By Gene Lee/DTD

If you recently ordered the 2648 terminal with the standard 8 Kbytes of RAM, you will be pleasantly surprised to find 16K of RAM instead. This is because terminals

manufactured after May 12, 1980, will have the 8K bottom plane board replaced with the universal RAM board with 16K of RAM mounted on it. DTD is enhancing the capabilities of the standard 2648 at no additional charge to the customer. This should please customers and make your job of selling 2648's easier!

New orders for 2648 terminals which will be manufactured and delivered after May 12, 1980, should no longer order the 13234A accessory, since the terminal will come with full memory. This change also applies to the 2649C which is the OEM version of the 2648A. The 13297A should no longer be ordered.

If your current open orders for 2648's or 2649's have 13234A's or 13297A's and are acknowledged to ship after May 12, please delete the extra memory. Work with your field Order Processing people to delete 13234A's and 13297A's.

SE/CE Starter Kits

By Gail Crowther/DTD

The SE and CE Starter Kits will soon be available from the Software Distribution Center. Orders can be placed after June 16 for the SE Starter Kit P/N 5955-6039 or the CE Starter Kit P/N 5955-6040. Shipping will be quoted as two weeks ARO. (Ordering information: HEART 12, supply division 5006, price-please advise).

The SE Starter Kit (for new hire SEs) contains all materials used in DTD's SE Level I and II Courses: 2645A User Instruction Tape; user, reference, and service manuals for Data Terminal products; manuals for Boise printers, Grenoble Data Capture Terminals, and San Diego plotters; tools for terminal products (key, IC removal tool, top plane extractor, and datacomm test hoods).

The CE Starter Kit (for new hire CEs) contains: user, reference, and service manuals for Data Terminal products; manuals for Grenoble Data Capture Terminals; tools for terminal products (key, tweaker, IC removal tool, top plane extractor, and datacomm test hoods).

The contents of these two starter kits will be reviewed each quarter to keep them current with the Data Terminals product line. When changes are made, the entire list of part numbers that make up the starter kits will be sent to each area CE and SE manager as a file copy.

We in Technical Support at DTD want to help new CEs and SEs over that first learning hurdle — and now we have a way to get them started!

SE/CE/TSE Subscription Service

By Gail Crowther/DTD

To keep your library and Starter Kits up to date, Technical Support at DTD now has the following subscription services:

SE Subscription Service	P/N 5955-6049
CE Subscription Service	5955-6050
TSE Subscription Service	5955-6051

See Computer Support news (Computer Marketing section) in this newsletter for information on signing up for the appropriate subscription service.

With these subscription services you will receive material such as: manual updates, new manuals, basic tape updates, new user tapes, games tapes, demo tapes, service notes, periodic technical publications (via tape, firmware, or articles).

Remember, Starter Kits are ordered through HEART, and the Subscription Service is ordered through the Software Distribution Center Order Form. Send in a form now and get on the data base.

2621 As a Librarian

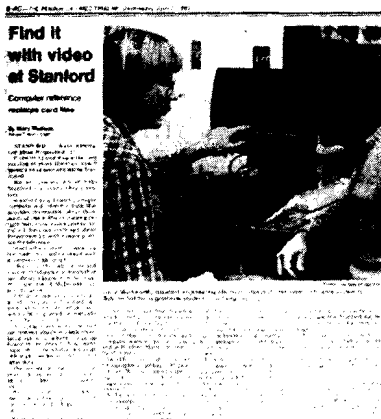
By Bruce Miller/DTD

The *Peninsula Times Tribune* (April 2, 1980) outlined a perfect application for the 2621P terminal in an article describing the use of the 2621P on the Stanford University library system. Terminals located at key points around the campus give convenient access to a "unique computerized reference bank that provides information about thousands of topics."

"Already in wide use at Stanford is a video display with a hard copy printout which can tell the user what's been printed on virtually any subject since 1973 . . . In addition to Stanford's own bibliographical holdings, (the terminals) also connect to the Library of Congress and 100 other cooperating libraries around the country."

This highly successful implementation of the 2621P is ideally matched to the terminal's features. Volumes of data can be quickly scanned using the video portion of the terminal. When the relevant information is located, a quick, convenient copy is printed using the integral thermal printer. What could be more suitable for the 2621?

Remember, the 2621P is still a *unique* product in the marketplace. No-one offers the combination of CRT and integral printer at a price competitive with the 2621P. The Stanford application is just one of many where the 2621 should be the logical choice.



HPG

3074A Price Increase

By Bernard Guidon/HPG

The price of the popular Data Link Adapter will increase effective July 1, 1980, to reflect Grenoble facility's higher cost of production for 3074A purchased material and associated costs. The new prices of the 3074A are \$650 factory base price, \$715 US price. The 30 days' grace period applies from July 1, 1980.

Which Printer For Your Customer's Data Capture Application?

By Bernard Guidon/HPG

One of the unique features of Grenoble's Data Capture Terminals is their on-site printing capability. This capability provides a means of user *feedback* on data capture equipment by allowing outputs such as routing slips, dispatching tickets, personnel messages to be given to every manufacturing worker.

The success of our built-in strip printer on the HP 3075A, 3076A has proved our customer's high interest in such a capability.

Today, the new RS-232C port available on the HP 3075A and 3076A terminals opens a new era in on-site printing, most of the printers available on the market today are equipped with an RS-232C interface compatible with the terminal port.

To help your customer make the best choice between the data capture terminal with built-in printer and an external printer, here are the pros and cons:

- The 3075/3076 strip printer is a very light duty printer capable of printing short messages (20 characters wide) at a low speed of approx. 40 lines/minute. Since the printer is built in the Data Capture Terminal, it is a cost-effective solution for applications requiring short messages (3 to 5 lines) at a rate of 10-15 messages per hour.

- If your customer's application requires a higher printing speed and/or higher duty cycle, an external printer should be recommended and the RS-232C interface (option 013) should be ordered with the Data Capture Terminal.

HP Grenoble is currently compiling a list of RS-232C equipment compatible with 3075A, 3076A terminals' port. Call your Sales Development contact at Grenoble or DTD for further details.

Don't Mix Up 3076A Cradles!

By Bernard Guidon/HPG

The HP 3076A wall-mounted Data Capture Terminal has been expanded with attractive new options: Magnetic Stripe Reader, Bar Code Reader, a built-in HP-IB Controller and an RS-232C auxiliary interface. These latter options require a connector fitted on the terminal rear panel.

Therefore, the 92904A cradle which holds the 3076A on a wall has been redesigned to provide adequate space through which to pass the complete HP-IB or RS-232C connectors.

The new design allows your customer to simply connect his external equipment without having to alter, unscrew, or cut his cradle connector. However, the earlier 92904A cradles were not equipped with this feature and thus, cannot be used to hold new 3076A's fitted with HP-IB/RS-232C or Bar code Reader options. If your customer insists on doing so, we recommend you ask him to order new 92904A cradles. Of course the new cradle is fully downwards compatible with older 3076A, 3077A terminals.



Boise

New Data Sheet for Technical SRs

By Sue Brault/Boise

Boise Division has designed a 2631B printer data sheet specifically for the HP85 interface. The title is 2631B printer, Opt 885, and should only be used when selling the 2631B/HP85 combination. Bulk quantities are now being shipped to all sales offices. Additional orders should be addressed to the Literature Depot in Palo Alto, P/N 5952-9458.

2619A Gets New Power Option

By Ron Whiteleather/Boise

Just in case it went unnoticed, the June 1 Corporate Price List contains a new power option for the 2619A 1000 lpm line printer. This new option, 017, designates the printer to be strapped for 230V, 60Hz operation. As with the other power options, there is no additional charge for inclusion of option 017 in a 2619A order.

The advantages of the 230V, 60Hz option include a lower current consumption by the printer and a more balanced electrical system. First, when operating the 2619A at 230V, 60Hz, the average current draw is 7 amps compared to 13 amps for 115V, 60Hz operation. Finally, the three phase characteristic of 230V service allows the system (CPU, tapes, discs, printers, etc.) to be balanced electrically and thus reduce the effects of momentarily high current requirements.

The addition of option 017 to the 2619A will make this printer more attractive to our customers in some instances. If you have any questions regarding this option, contact your Boise Sales Development person.

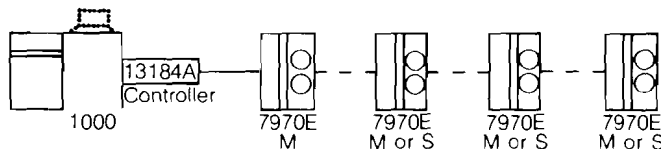
Multi-density Switch Selectable Tape Drives

By Jim Skog/Boise

How many times has your customer asked you for a multi-formatted or multi-density tape drive? In Sales Development we hear this question a lot. Many SRs are not aware that there is a 7970E tape drive from Boise Division which can read only 800 bpi NRZI-formatted data and 1600 bpi Phase Encoded (PE) magnetic tapes. There is also a 7970E which is 7-track or 9-track switch selectable and 800/1600 selectable.

This 7970E tape drive was designed in the early 1970's for HP 1000-type OEMs. The 13184A controller was designed for these read-only tape drives on the 1000 system. The options that read 7-track formats can read 200 bpi, 556 bpi and 800 bpi densities. The 9-track formatted units are 800 bpi and 1600 bpi switch selectable. There is no software driver written for the 13184A controller, which is the only way these read-only tape drives can talk to a 1000. This means that the only people who can utilize these units are 1000 customers with the sophistication to write their own software driver. The 3000 systems cannot use these read-only units.

Since the read-only units are basically 7970E's, they are subject to the master-slave concept. A master drive must be the first drive on the system. Master drives have all of the read electronics which are shared by slave drives. Because the slave drive does not have the read electronics it can be less expensive, but it must be preceded by and connected to a master drive. One master drive can precede up to three slave drives.



After the first 7970E master drive, either master or slave drives can be added up to a maximum of four drives on one controller.

There are four multi-format read-only tape drive options. Option 163 and option 162 are master and slave drives, respectively, which are nine track, 800 bpi/1600 bpi, read-only 7970E tape drives.

Option 165 is a master and option 164 is a slave. These are more versatile than the 162 and 163 options. These read-only tape drives can handle 7-track and 9-track tape formats and they can handle the older 200 bpi and 556 bpi NRZI densities. (See table below)

7970E Read-Only Tape Drives

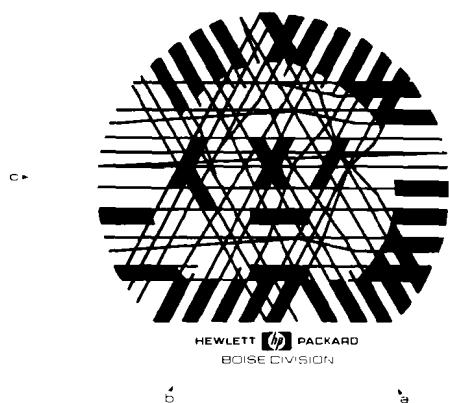
Model-Option	Density (bpi)				Master	Slave	Tracks		Format		
	200	556	800	1600			7-tr	9-tr	NRZI	PE	RO
7970E-162			X	X		X		X	X	X	X
-163			X	X	X			X	X	X	X
-164	X	X	X	X		X	X	X	X	X	X
-165	X	X	X	X	X		X	X	X	X	X

This type of versatility would interest many varied applications. Customers which act as service bureaus or print shops would be interested in reading multi-density and/or multi-formatted tapes from their clients. Microfilming services usually get their data in the form of magnetic tapes from their customers. Many large businesses and schools or government entities have older tape libraries which include these older technologies. These customers can have one tape drive to read all of these tapes. Magnetic tape is still the primary interchangeable standard of the computer industry. Again, these read-only tape drives will not work on a 3000 and should only be considered by 1000 customers who understand they accept all responsibility in writing their own driver software. If you have any questions about this product, call your Boise Sales Development contact.

Look Again at the 2631/35B Design

By Sue Brault/Boise

You saw it on the Availability Schedule Cover ... You saw it on the buttons ... But did you *really* see it?



Hold the surface of the picture at eye level, slant the picture slightly downward. Close one eye. Sight down the plane of the arrows to see the messages.

DMD

7900 Disc Drive Obsolescence Reminder

By Cathy Salinas/DMD

Remember, the 7900 Disc Drive will be withdrawn from production by the end of FY'80. Disc Memory Division will accept orders for the 7900 disc subsystem (12960A) and related accessories through August 31, 1980. When assisting your customer in choosing a replacement, please consider the H-Series 7906 20Mb cartridge drive as a viable solution.

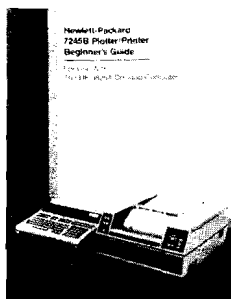
San Diego

7240A/7245B Plotter/Printer Update

By Bill Leober/SDD

The 7245B/9825A Beginner's Guide is now available!

This invaluable manual can really help your customers get up and running on their 7225B/9825A systems. The Beginner's Guide includes instructions on how to set-up the 7245B Plotter/Printer, background information on the ROM commands, and sample programs to draw simple graphics and charts. It is written in plain English so users at all levels of computer training can benefit from the material. Order your copies today (P/N 07245-90014).



7240A/7245B Plotter/Printer Enhanced Writing Quality

The new 7240E (RS-232C/V.24 version of the 7245B) and 7245B Plotter/Printers both display a greatly enhanced writing quality (the result of an R&D commitment to solving the problem of the low contrast writing that has been characteristic of thermal paper). At the heart of the new models is the *soft platen* which has a silicone rubber insert and replaces the old anodized aluminum one found in the 7245A. Because the rubber insert is pliable, more uniform contact between the paper and the thin film printhead can be achieved, increasing the writing contrast. Also, the silicone material acts as an excellent thermal insulator. The temperature gradient across the paper is therefore greater and the image sharper. A new, improved paper further increases the quality of output from the 7240A and 7245B.



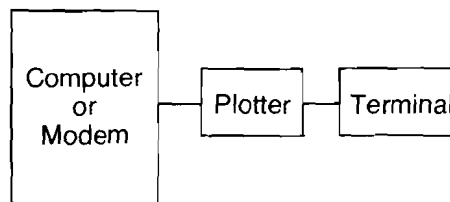
Introducing the 17604A Personality Module for the 7225A Plotter

By Bill Clark/SDD

San Diego Division adds a powerful new member, the 17604A Serial RS-232C/V.24 Interface, to the versatile family of personality modules for the 7225A. With the 17604A Personality Module as part of your arsenal, you should be able to solve all or most remote data plotting applications where a low-cost solution is the best alternative to the higher performance, more expensive 7220A four-color plotter.

Priced at \$900 (US), the 17604A will allow the 7225A to be used remotely over a telephone line in the same manner as the larger 7220A and 7220S multicolor plotters. Like the four-color plotters, the 17604A is connected between a modem and terminal using the familiar "eavesdrop" configuration.

Eavesdrop Configuration



Remember, the 17603A *cannot* be used remotely with a modem. The 17604A speaks the easy-to-program HP-GI (Hewlett-Packard Graphics Language) and has the capability of internally generated arcs and circles from one command, plus hardwired interface features like the 17603A. Although the 17604A is fully backwards compatible with the 17603A, it is not intended to replace the 17603A since many users will need *hardwired capability* only.

The 17604A finally bridges the gap between the 7225A and 7220A/S (which understands HP-GL also) by providing the customer a choice between a lower cost or higher performance multicolor remote plotting capability. Following is a summary of the major features/advantages offered by the 17604A and a comparison of the 17604A and the 17603A and 7220A.

17604A Features and Advantages

Features	Advantages
RS-232C/V.24 I/O Modem and Terminal "eavesdrop" connection configuration	Hardwire compatible with most common non-HP computer, microprocessor or mini-computer based systems. Can be installed in a hardwired connection directly to the computer or in a remote environment via telephone and modem. Can be used <i>on-line</i> from the computer or <i>local</i> from the terminal.
Seven baud rates plus 16X external clock input	Runs at the most common baud rates. The external clock input allows the plotter to be run with an external system clock up to a maximum rate of 2400 baud.
Selectable hardwire or software handshake	Allows the user flexibility to select either hardwire or software handshake mode via a switch on the rear panel or override the switch setting with a software command. If hardwire mode is activated, the plotter sets a designated pin on the interface high when there is enough buffer space available in the plotter to accept the next block of data from the computer. If software handshake is activated, then a sequence of characters is transmitted between the plotter and computer to accomplish the same task.
HP-GL Graphic Instruction Set	Once interfaced, the plotter is easy to program with a set of simple two-letter mnemonic commands. The intelligence of the 17604A provides such powerful internal features as character generation, dashed lines, digitizing, arcs and circles and error code transmission.
Integer Scaling	Plotting surface can be scaled in integers ($\pm 32,767$) without complicated scaling operations. The user plots in his or her own integer units.
Velocity Select	The user can set pen speed to allow for various types of plotting media. The 17604A can be used with the 17055A Overhead Transparency Kit where normal pen speed must be reduced for best results on overhead film.
DTR Bypass/Normal Selection Switch	Prevents user from being logged off the computer system when the DTR control line is "low" and power to the 7225A is either turned on or off. This is useful with certain types of modems.
Monitor Mode	All data sent to the plotter will be passed on to the terminal even when the plotter is logically "on." Aids in program debugging or error detection.

Comparing the 17604A to the 17603A and 7220A

	7225A/ 17604A	7225A/ 17603A	7220A
HP-GL	Yes	Yes	Yes
Hardwired Interface	Yes	Yes	Yes
Modem Capability	Yes	No	Yes
Arcs and Circles	Yes	No	Yes
Personality Module Price (USA)	\$900	\$750	—
Price (USA)	\$2950*	\$2800*	\$5000

*Includes 7225A and Personality Module.

Market Opportunities for the 17604A

The primary emphasis of the 17604A will be on the Timeshare end-user or Timeshare OEM marketplace. Additionally, there will be other opportunities for hardcopy graphics with non-HP computers, non-HP desktop computers, and non-HP terminal mainframes where the application is in an EDP environment. Although the 17604A has been very successful in satisfying the needs of most

low-cost hardwired applications, there is a need for *low-cost remote data plotting* also. The 17604A meets this need since it is fully HP-GL compatible with the 7220A/S. Now it is possible for the customer to develop software for either the 7220A or 17604A and have full confidence the application software will work with both devices. The customer need only be concerned with the larger sized plotting area and the multiple pen capability of the 7220A. If there is no need for arcs and circles or the remote data plotting features, then the lower cost 17603A should be considered as a viable alternative.

Your users will find the 7225A/17604A as easy to program as the 7225A/17603A and 7220A because all three devices share the same HP-GL Interface language. Because of HP-GL, you will also find it much easier to sell to the user who does not have graphics software support for his system.

Sales and Demonstration Aids

Data Sheets	P/N
7225A Color Brochure	5952-2881
7225A Data Sheet (includes 17604A)	5953-4008
Operating and Programming Manual	
17604A Operating and Programming Manual	17604-90000
Demonstration Aids	
Demo Tape 7220A/S, 7240A, 7225A/17603A, 7225A/17604A with 9825	07220-18001

Ordering Information

	Price List	Availability	US Price
*7225A	Now	3 Weeks	\$2050
*17604A	6/1/80	8 Weeks	\$ 900

*Note: Customer must order both 7225A and 17604A

Using the 7310A as an APL Printer

By Tom Tremble/SDD

The 7310A thermal printer provides optional capability for an APL character set. When option 009 is ordered, an APL character set compatible with the HP 2641A APL terminal, as well as several others, is installed in character set location "A". The USASCII set remains the primary character set. Using the 7310A with the 2641A for both ASCII and APL printing applications may require an extra command be sent to the printer.

When the APL mode is off, normal ASCII characters and single APL characters entered with the APL mode on (but turned off prior to printing), are printed correctly. A problem arises when attempting to print the APL overstrike characters with the terminal's APL mode off.

Overstrike characters are contained in a different character ROM location in the terminal, while the 7310A creates them through a "character-backspace-character" operation. With the APL mode off, the terminal sends the character set designation and a shift out control sequence for character set "B", producing an incorrect printout. When its APL mode is on, the 2641A expects a peripheral printer to be an APL device only. For single APL characters, it sends only the required character code. Overstrike characters are transmitted as "character-backspace-character". No character set designation or shift-out sequence is sent to the printer. This means that the 7310A's APL character set must first be designated as the *primary* set by sending it the Escape sequence "E_C (A)". Enter the sequence on the display with the display functions mode on, and then use the green and gold function keys to copy that line to the printer.

For dedicated APL printer applications where the APL character set must be the power-on primary set, internal character set selection switches must be changed. The switches are located on the interface PCA, A3 (connected to the rear panel by a ribbon cable).

To select APL as the power on primary set, and fixed space USASCII as the secondary, set the switches as follows:

	APL as Primary	Normal Factory Setting
S1:	0 0 1 0 0 0 0	0 0 0 0 0 0 0
S2:	0 0 1 0 1 0 1	0 0 0 0 1 0 1

Where: 0 = Open; 1 = Closed

Consult the 7310A service manual, P/N 07310-90000 for other character set selections.

Sales Amplifiers Review

By Vern Hudson/SDD

Were you aware that San Diego Division offers a series of Sales Amplifiers to assist you in helping your customer select the best plotter and/or interface options for his/her application? Take a moment to note these publications and see if you have them in your files for future reference. Your factory RSE will send copies — just let us know! Here is a brief description of each:

- S/A #12, Revised August '78. HP 7221A/B Hardware/Software Interfacing Qualification Guide: provides a series of questions to help you qualify your prospective customers. Examples of programs give your customer an indication of the extent of programming necessary to operate the 7221A/B.

- S/A #13, January '79. A Selection Guide for the 7225A with its choice of personality (interface) modules: assists with ROM selection of desktop computers, interface options, and their compatibility.

- S/A #14, January '79. Demoing the 7221A/B Graphics Plotter on the Worldwide G.E. Computer Network: "walks" you through the G.E. timeshare demo procedure. Everything you need to know about the hardware, switch settings, local G.E. phone number, access information, etc.

- S/A #15, January '80. HP 7220 Plotter Demonstration Notes: shows you how to qualify a customer as to proper interface, demo the 7220 and actually run a few simple programs to show off the plotter's capabilities on his/her system.

- S/A #16, January '80. How to Use HP-IB Plotters with the Commodore PET 2001 Computer.

- S/A #17, February '80. The Numerical Control Market for HP Graphics Plotters: gives detailed information on HP's line of graphics plotters for use in the NC marketplace.

These Sales Amplifiers should enable you to explore these markets and open new sales doors for you. Let us know how we can provide further assistance.

Demo Tapes for SDD Products

By Greg Elmassian/SDD

	264X Terminal	9815 Computer	9825 Computer	9835 Computer	9845 Computer
7220			07220-18001		
7221	07221-18001 07221-18010				
7225(1)		07225-18003	07225-18002		
7225(2)	(4)		09872-18001	09872-18002	09872-18003
7245	(4)		07245-18001	07245-18002	07245-18002
7310(3)	07310-18001			07310-18002	
9872	(4)		09872-18001	09872-18002	09872-18003

Notes:

(1) With 17600 Personality Module; (2) With 17601 Personality Module; (3) With HP-IB Interface; (4) Use 2647 demo tapes or Multiplot for 2647/plotter demo.



"The Blitz"

Cold calling is one of the most difficult things an SR does. From *John Knopp*, DM (Commercial) Neely/Santa Clara office comes a technique for making cold calling not just easier, but more fun and . . . more effective. It's called "The Blitz".

According to *John*, it's great for any kind of horizontal territory where the charter is "to go out and find new people to talk to." Neely/Santa Clara has been experimenting with the technique over the past year. About 10 blitz days have been held (three of which were in *John's* district).

What is it?

Basically, the blitz involves flooding part of a geographic territory with sales teams making cold calls intensively for half a day. It is most effective when kept to a single, simple purpose — to find prospects by making a large number of cold calls.

John cautions that the blitz is nothing more ambitious than contacting many new people, making only the grossest judgement about their quality as a new prospect. Quantity and speed are the focus (you can't do much in a 10-minute call!); more elaborate purposes have proven less effective.

How does it work?

The SR for the territory is the host and assigns teams (1 SR, 1 support person) to the various sections of his/her territory. Teams meet for breakfast to receive maps and review the rules, then meet again for lunch to end the blitz, trade war stories and receive awards. The host SR later collects details from the teams to set priorities for his/her own follow-up work, then reports on the progress of prospects at the next District Meeting.

Of special importance is the point system developed to direct the efforts of a team. The host and his/her DM are responsible for identifying a clear purpose for the blitz and a point system that motivates and rewards teams for adhering to that purpose.

Results

As well as the simple objective of making lots of cold calls, the blitz usually meets other lesser objectives of:

- Characterizing the territory (identifying types of business, concentrations of business, growth and development areas, etc.) This is especially helpful in new territories and for new SRs.
- Promoting a team spirit in the district, including support people
- Developing individual prospecting skills

And more . . .

Averaging the results of 10 blitz days, *John* found that six two-person teams will call on more than 100 companies in half a day, generate 8-10 promising prospects, at a total cost (including meals and prizes, but not people-time) of about \$275. "This is clearly the cheapest source of leads I am aware of," says *John*.

Variations

Since prospecting for new third parties is not geographically concentrated, one third party SR developed a variant of the blitz for his own use: all SRs in the district meet for breakfast to launch the blitz; each then makes cold calls in his own geographic territory for the next two weeks in search of new third party prospects. The point system rewards an SR for getting lots of quality information about a prospect. The blitz concludes at a lunch meeting after two weeks.

So what's in it for you?

New leads, new sales (maybe), and lots of fun. The SR responsible for one of the most successful blitz days — in San Jose, CA. in February — is still following up on hot prospects, with *four* sales likely.

Why not organize a blitz day in your territory?

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